HER4 Protein, Human (HEK293, His-Fc)

Cat. No.:	HY-P73035
Synonyms:	Receptor tyrosine-protein kinase erbB-4; 4ICD; E4ICD; s80HER4; ERBB4; HER4
Species:	Human
Source:	HEK293
Accession:	Q15303 (Q26-P651)
Gene ID:	2066
Molecular Weight:	125-135 kDa

PROPERTIES

AA Sequence	QSVCAGTENK LSSLSDLEQQ YRALRKYYEN CEVVMGNLEI TSIEHNRDLS FLRSVREVTG YVLVALNQFR YLPLENLRII RGTKLYEDRY ALAIFLNYRK DGNFGLQELG LKNLTEILNG GVYVDQNKFL CYADTIHWQD IVRNPWPSNL TLVSTNGSSG CGRCHKSCTG RCWGPTENHC QTLTRTVCAE QCDGRCYGPY VSDCCHRECA GGCSGPKDTD CFACMNFNDS GACVTQCPQT FVYNPTTFQL EHNFNAKYTY GAFCVKKCPH NFVVDSSSCV RACPSSKMEV EENGIKMCKP CTDICPKACD GIGTGSLMSA QTVDSSNIDK FINCTKINGN LIFLVTGIHG DPYNAIEAID PEKLNVFRTV REITGFLNIQ SWPPNMTDFS VFSNLVTIGG RVLYSGLSLL ILKQQGITSL QFQSLKEISA GNIYITDNSN LCYYHTINWT TLFSTINQRI VIRDNRKAEN CTAEGMVCNH LCSSDGCWGP GPDQCLSCRR FSRGRICIES CNLYDGEFRE FENGSICVEC DPQCEKMEDG LLTCHGPGPD NCTKCSHFKD GPNCVEKCPD GLQGANSFIF KYADPDRECH PCHPNCTQGC NGPTSHDCIY YPWTGHSTLP QHARTP
Biological Activity	Immobilized Human HER4, at 2 μg/mL (100μL/well) can bind Biotinylated Human NRG1 β1, the ED_{50} for this effect is 57.56 ng/mL.
Appearance	Lyophilized powder
Formulation	Lyophilized from a 0.2 μm filtered solution of PBS, pH 7.4.
Endotoxin Level	<1 EU/μg, determined by LAL method.
Reconsititution	It is not recommended to reconstitute to a concentration less than 100 μg/mL in ddH_2O. For long term storage it is recommended to add a carrier protein (0.1% BSA, 5% HSA, 10% FBS or 5% Trehalose).
Storage & Stability	Stored at -20°C for 2 years. After reconstitution, it is stable at 4°C for 1 week or -20°C for longer (with carrier protein). It is recommended to freeze aliquots at -20°C or -80°C for extended storage.

Shipping	Room temperature in continental US; may vary elsewhere.

DESCRIPTION

Background	HER4, a tyrosine-protein kinase, serves as a pivotal cell surface receptor for neuregulins and EGF family members, playing indispensable roles in the development of the heart, central nervous system, and mammary gland, as well as in gene transcription, cell proliferation, differentiation, migration, and apoptosis. It is essential for normal cardiac muscle differentiation during embryonic development and postnatal cardiomyocyte proliferation. Moreover, HER4 is required for the proper development of the embryonic central nervous system, particularly neural crest cell migration and axon guidance, as well as for mammary gland differentiation and lactation induction. Acting as a receptor for neuregulins NRG1, NRG2, NRG3, NRG4, and EGF family members BTC, EREG, and HBEGF, ligand binding triggers receptor dimerization and autophosphorylation, creating multiple combinations of intracellular phosphotyrosines that elicit ligand- and context-specific cellular responses. HER4 mediates phosphorylation of SHC1 and activates the MAP kinases MAPK1/ERK2 and MAPK3/ERK1. Isoforms JM-A CYT-1 and JM-B CYT-1 phosphorylate PIK3R1, activating phosphatidylinositol 3-kinase and AKT1 to protect against apoptosis and promote cell migration in response to NRG1. Isoforms JM-A CYT-2 and JM-B CYT-2 lack the phosphotyrosine necessary for PIK3R1 interaction, thus foregoing these effects. Proteolytic processing of isoforms JM-A CYT-1 and JM-A CYT-2 yields soluble intracellular domains (4ICD) that translocate to the nucleus, promoting nuclear import of STAT5A, mammary epithelium differentiation, cell proliferation, and gene expression activation. Additionally, ERBB4 soluble intracellular domains can translocate to mitochondria, inducing apoptosis.

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